

Abstract

A method for improving the fluid dispense rate in a metering system utilizing speed includes the steps of modifying the fluid flow rate profile during a portion thereof so as substantially increase or decrease the speed of the motor during certain portions of a metering cycle in order to improve the efficiency of the metering system. For a variable speed pump producing a sinusoidal speed profile, the pump motor speed can be increased to increase the dispense velocity during the beginning and end of the dispense phase to reduce perfusion and improve metered volume precision or a motor speed profile can be applied which is inverted relative to that of the variable speed pump to produce a constant velocity flow. Alternately or in addition to the above, the home position of the variable speed pump can be shifted to produce fluid velocity during the entirety of a dispense portion of a metering system cycle.